



MERCER
COUNTY COMMUNITY COLLEGE

COURSE OUTLINE

Course Number
DMA 225

Course Title
Computer Animation I

Credits
3

Hours:
Lecture/Lab/Other
1 / 4 / 0

Pre-requisites:
DMA 135

Implementation
Spring/2022

Catalog description:

Using animation software and/or hand drawn images, students create two-dimensional animations for objects, characters, and special effects. Animations are outputted for film, video, the web, and other media. Current professional software and best practices are used.

General Education Category:
Not GenEd

Course coordinator:
Mauro Zamora ext: 3340 zamoram@mccc.edu

Required texts & Other materials:

I Moved to Los Angeles to Work in Animation
by Natalie Nourigat
ISBN-10: 1684152917, ISBN-13: 978-1684152919

Course Student Learning Outcomes (SLO):

Upon successful completion of this course the student will be able to:

1. Explain basic animation, storytelling, and design principles as they relate to specific animation projects. [ILG # 1, 4-6, 10, 11; PLO # 6]
2. Demonstrate knowledge of animation concepts such as layout, exposure sheets, keyframing, breakdowns, in-betweens, etc. [ILG # 1, 2, 4, 10, 11; PLO # 3, 4, 5]
3. Design and develop animations that demonstrate one or more of the 12 principles of animation. [ILG # 1, 2, 4, 5, 10, 11; PLO # 1, 2, 3, 4, 5]
4. Demonstrate effective knowledge of the tools and commands of professional animation software. [ILG # 1, 2, 4, 10, 11; PLO # 1, 2, 3, 4, 5]
5. Visualize a story using design, narrative, and animation principles. [ILG # 1, 2, 4-11; PLO # 2, 3, 4, 5]
6. Create two-dimensional drawings that convey the illusion of three-dimensional volume, distance, and form through design and animation principles. [ILG # 1, 2, 4, 10, 11; PLO # 1, 2, 3]

Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 1. Written and Oral Communication in English. Students will communicate effectively in both speech and writing.

Institutional Learning Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

Institutional Learning Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Institutional Learning Goal 5. Social Science. Students will use social science theories and concepts to analyze human behavior and social and political institutions and to act as responsible citizens.

Institutional Learning Goal. 6. Humanities. Students will analyze works in the fields of art, music, or theater; literature; philosophy and/or religious studies; and/or will gain competence in the use of a foreign language.

Institutional Learning Goal 10. Information Literacy: Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Institutional Learning Goal 11. Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for Digital Media Arts (PLO)

1. Understand the pre-production process, for applied design in the areas of animation, multi-media, web design, and digital asset distribution on the internet.
2. Understand and apply storytelling principles applicable in the areas of animation, multi-media, web design, and digital asset distribution on the internet.
3. Produce and manage digital assets for various production scenarios including animation, multi-media, web design.
4. Produce and manage two-dimensional and three-dimensional digital assets containing change over time and throughout pagination using professional software.
5. Use professional 3-D modeling, animation, prototyping, or text editor software applications.
6. Develop and present ideas in both written and oral formats.
7. Use professional software applications to design websites with accessible design and content.
8. Use design principles to develop websites that communicate effectively.
9. Create a professional portfolio to serve in the pursuit of further education or employment.

Units of study in detail – Unit Student Learning Outcomes:

Unit I "Bouncing Ball " [Supports Course SLO 1, 3-6]

The student will be able to:

- Animate a simple object using keyframing, spacing, breakdowns, and in-betweens.
- Create an animation utilizing principles such as squash and stretch, slow-in slow-out, anticipation, and exaggeration.
- Visualize and imbue a simple object with personality and emotion.
- Design and layout an environment that effectively tells a story and delivers readability of motion.
- Explain animation concepts such as key, frame, keyframe, frame rate, breakdowns, and in-betweens.
- Create an animation that displays on "2s".
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit II "Flag Wave" [Supports Course SLO 1, 3-7]

The student will be able to:

- Animate a planar object using keyframing, spacing, breakdowns, and in-betweens.
- Create an animation utilizing principles such as overlapping animation, squash and stretch, S and C curves.
- Simulate organic motion and the illusion of applied physics through animation techniques.
- Explain animation concepts such as overlapping animation and S and C curves.

- Create an animation that displays on “2s”.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit III **“Pendulum Swing”** [Supports Course SLO 1, 3-7]

The student will be able to:

- Animate an object using keyframing, spacing, breakdowns, and in-betweens.
- Create an animation utilizing principles such as slow-in slow-out, arcs, overlapping animation, and solid drawing.
- Construct a seamless, looping animation utilizing professional animation software.
- Explain animation concepts such as arcs, slow-in slow-out and solid drawing.
- Create an animation that displays on “2s”.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit IV **“Hammer Hits Nail”** [Supports Course SLO 1, 3-7]

The student will be able to:

- Animate an object using keyframing, spacing, breakdowns, timing, and in-betweens.
- Create an animation utilizing principles such as overlapping animation, squash and stretch, anticipation, follow-through, and arcs.
- Design and layout an environment that effectively displays and delivers readability of motion.
- Explain animation concepts such as pose-to-pose, follow through, anticipation, arcs, and squash and stretch.
- Construct an animation that utilizes different frame values such as “2s”, 4s”, or “6s”.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit V **“Swimming Fish”** [Supports Course SLO 1-7]

The student will be able to:

- Animate an object using keyframing, spacing, straight ahead, timing, and in-betweens.
- Create an animation utilizing principles such as solid drawing, timing, overlapping animation, squash and stretch, anticipation, and arcs.
- Design and layout an environment that effectively displays and delivers readability of motion.
- Explain animation concepts such as pose-to-pose, straight ahead, spacing, timing, arcs, and squash and stretch.
- Construct an animation that utilizes different frame values such as “2s”, 4s”, or “6s”.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit VI **“Arm Throw”** [Supports Course SLO 1, 3-7]

The student will be able to:

- Animate an arm or character using pose-to-pose, keyframing, spacing, breakdowns, timing, and in-betweens.
- Create an animation utilizing principles such as smear, overlapping animation, squash and stretch, anticipation, follow-through, and arcs.
- Design and layout an environment that effectively displays and delivers readability of motion.
- Explain animation concepts such as smear, time charts, X sheets, follow through, anticipation, arcs, and squash and stretch.
- Construct an animation that utilizes different frame values such as “2s”, 4s”, or “6s”.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit VII **“Character Design”** [Supports Course SLO 1, 3-7]

The student will be able to:

- Draw and design a stylized character head using animation and design techniques.
- Animate a character’s head rotating in space using keyframing, spacing, breakdowns, timing, perspective, and in-betweens.
 - Create an animation utilizing principles such as solid drawing, overlapping animation, follow-through, and arcs.

- Design and layout an environment that effectively displays and delivers readability of motion.
- Explain animation concepts such as perspective, timing, and follow through.
- Construct a seamless, looping animation utilizing professional animation software.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit VIII “Walk Cycle” [Supports Course SLO 1, 3-7]

The student will be able to:

- Construct a seamless, looping animation to display a unique character walk.
- Define and develop the four main poses of a walk (Contact, Down, Passing, and Up).
- Apply animation principles such as squash and stretch, exaggeration, anticipation, follow through, overlapping animation, and arcs to produce a walk animation.
- Design and layout an environment that effectively displays and delivers readability of motion.
- Explain animation concepts such as perspective, timing, and follow through.
- Construct a seamless, looping animation utilizing professional animation software.
- Discuss student work during a critique and critically evaluate rendered artwork.

Unit IX “Special Effects” [Supports Course SLO 1-7]

The student will be able to:

- Draw and design a stylized effect such as fire, lightning, water, or other natural force using animation and design techniques.
- Construct the effect from spawn to expiration using techniques such as keyframing, spacing, breakdowns, timing, and in-betweens.
- Apply animation principles such as solid drawing, overlapping animation, follow-through, and arcs to create organic motion and behavior.
- Design and layout an environment that effectively conveys a narrative and delivers readability of motion.
- Construct a seamless, looping animation utilizing professional animation software.
- Discuss student work during a critique and critically evaluate rendered artwork.

Evaluation of student learning:

ATTENDANCE:

Each student is expected to attend all classes. Missed classes will negatively impact student’s work, progress and final grade. Five or more missed classes (online or in-person) will result in an automatic failure. In addition, excessive tardiness or lateness will negatively impact a student’s work, progress and final grade.

If you have an excused absence, it is your responsibility to catch up with the class by reviewing pertinent notes and/or requesting classmates to review the material and assignment with you. Please do not expect the instructor to repeat the demonstrations and lectures that you have missed. However, be sure to ask for any handouts or assignment specifications and due dates that you may have missed. Please do not expect the instructor to repeat the demonstrations and lectures that you have missed. However, be sure to ask for any handouts or assignment specifications and due dates that you may have missed.

GRADING:

Values of quality, aesthetics, taste, etc., are based upon the instructor’s judgment of the work produced, the effort employed, and the total result achieved – as well as progress throughout the semester.

To receive full credit, all assignments are due on time ***at the beginning*** of the class noted. Late assignments will be accepted, but a late penalty will be applied to any assignment submitted after the deadline.

BREAKDOWN:

Projects	60%
Quizzes	20%
Homework	10%
Attendance	10%
Total	100%